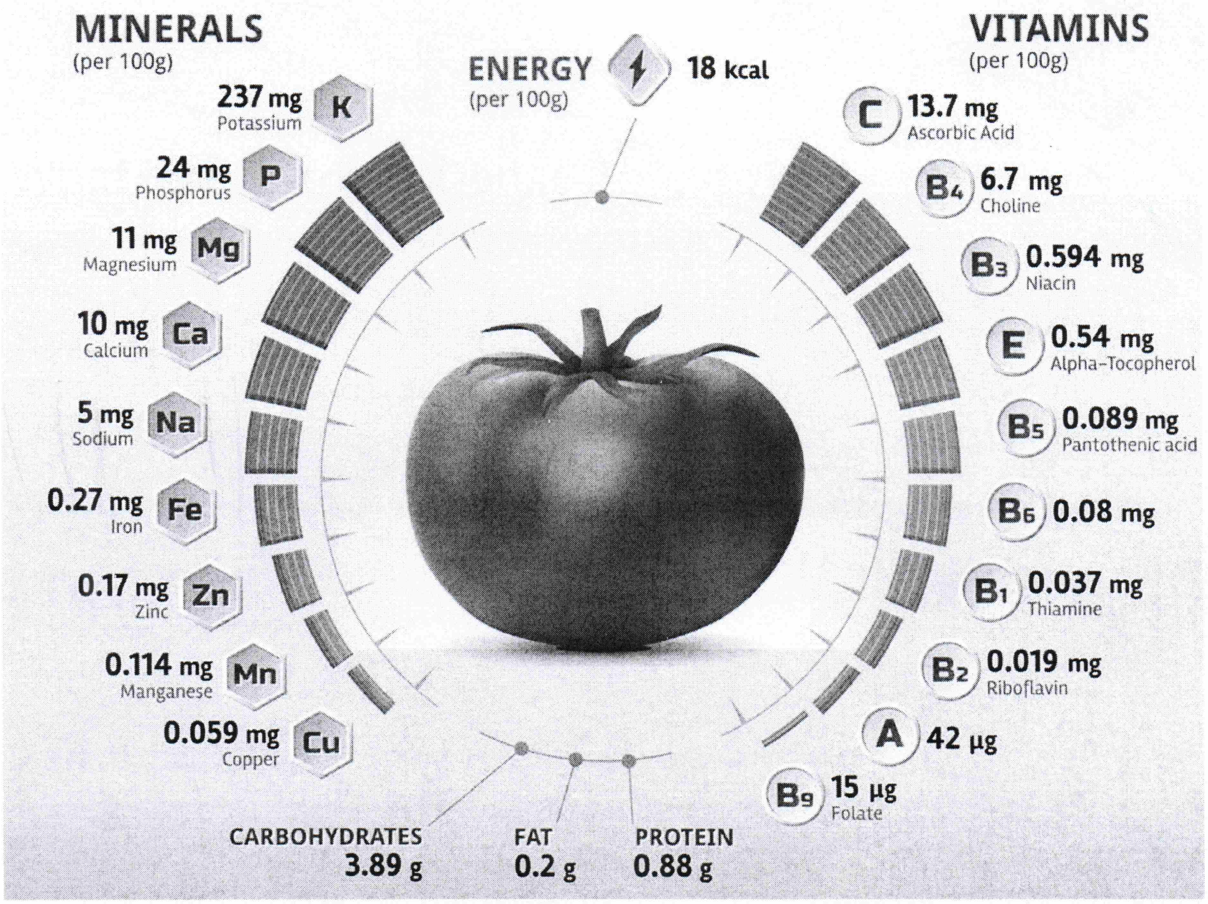
# What is a Nutrient Dense Tomato?

Hello,

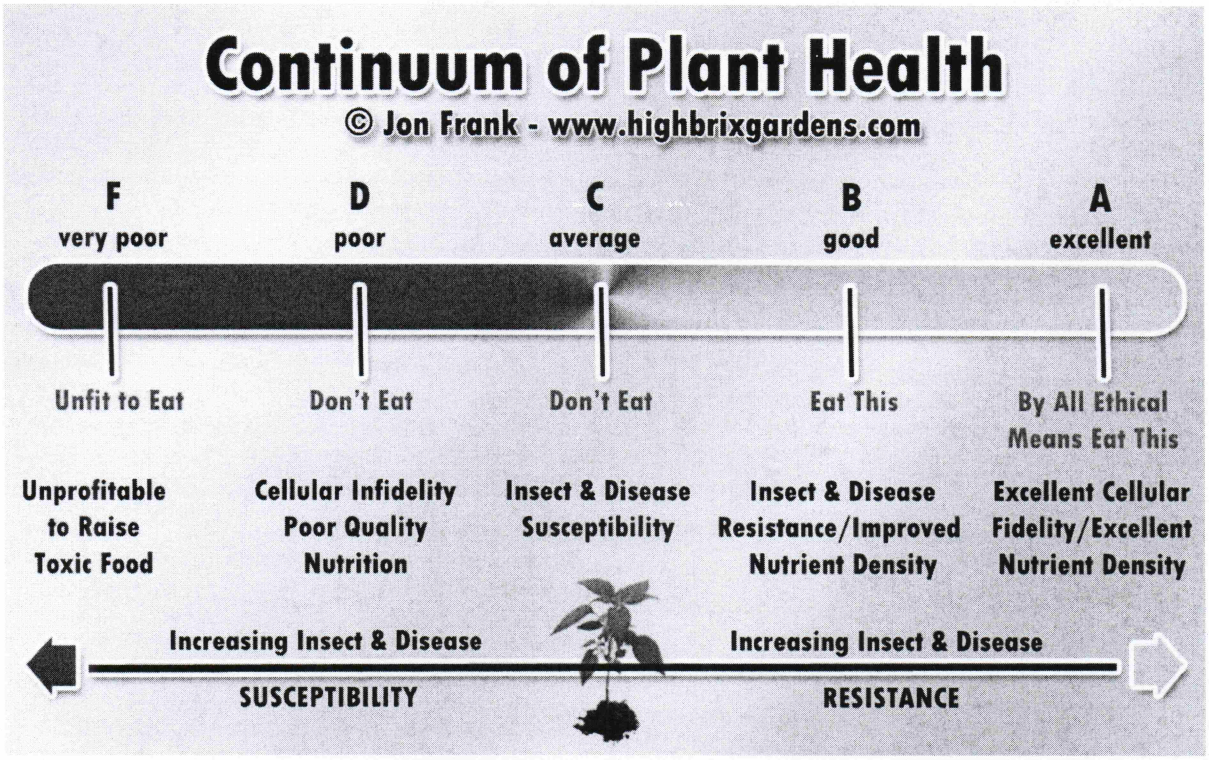
Nutritionally a tomato is a tomato right? Wrong! A tomato, like all produce is a product of its environment. Because environments are so different the nutritional profile of a tomato is varied. Unlike widgets on an assembly line, tomatoes vary in their nutritional profile. They are unique.

The USDA has created and maintains a food Nutrient Database. This is the data used to create food labels. Indirectly, it also helps perpetuate a myth--a myth that says foods are basically standardized. In other words a tomato is a tomato is a tomato. This is not true and I will prove it to you in this article.



In reality the USDA database is a slow moving average of what is bought and sold in stores. How do I know? Because I called the USDA and asked them how they get their data. I was told that they do not have their own lab. Instead they buy produce in stores from around the country, send it to regional labs for nutrient analysis, and compile the data. Nutrients are averaged and every so often the database is updated if the nutrients change.

In truth there is a continuum of nutrients in tomatoes and all foods. The range is from very poor, poor, average, good, excellent, to outstanding nutrient density. In today's marketplace as long as the produce is not rotting or won't make you sick it is fine to sell.


Continuum of Plant Health
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F
very poor
D
poor
C
average
B
good
A
excellent
Unfit to Eat
Don't Eat
Don't Eat
Eat This
By All Ethical Means Eat This
Unprofitable to Raise Toxic Food
Cellular Infidelity Poor Quality Nutrition
Insect & Disease Susceptibility
Insect & Disease Resistance/Improved Nutrient Density
Excellent Cellular Fidelity/Excellent Nutrient Density
Increasing Insect & Disease
SUSCEPTIBILITY
Increasing Insect & Disease
RESISTANCE

The question that so desperately needs to be answered is what is Nutrient Density? How is it defined? One attempt is to use the USDA data and say "For every 1,000 calories worth of this produce how much vitamins and minerals does it contain. In other words nutrient density is defined as a score representing so many nutrients per so many calories. There are 2 problems with this definition.

1. Foods are variable in there nutrient composition. Therefore the USDA data, which does not show this variation, should not set the standard.
2. The carbohydrates (calories) and mineral content in produce rise and fall together. Thus the ratio between calories and minerals may not change that much from low quality to high quality.

Instead I am proposing that nutrient density in foods must be defined quantitatively. In other words how much nutrients are in 100 grams of these tomatoes vs. 100 grams of another tomato. Or to say it at the ground level: Nutrient Density = Nutrients per Bite of Food.

The USDA is useful as a reference to what average is but it does not indicate what nutrients should be present. If I was to ask you what is a Nutrient Dense Tomato in terms of quantifying minerals you couldn't define it and neither can I because it hasn't been defined. Nobody knows. What you would say is that it must taste good, really good. And it should have a strong tomato aroma. It should truly nourish the consumer and supply high levels of minerals and enzymes. The best indicator of quality is children. If they really like to eat raw produce you know you are on the right path.

Let's look at a couple of tomato samples and see how they analyze compared to the USDA reference.

## TOMATO NUTRIENT COMPARISONS

| Nutrient | Unit | Luke's Sample<br>Nutrients per 100 grams | USDA Reference<br>nutrients per 100 grams | Organic - Greenhouse<br>Nutrients per 100 grams |
|---|---|---|---|---|
| **Brix** | °Bx | 8.7 | Not Given | 4.9 |
| **Dry Matter** | % | 5.7 | 5.5 | 4.6 |
| **Protein** | Gram | 1.2 | 0.9 | 0.8 |
| **Calcium** | Milligram | 86 | 10 | 96 |
| **Phosphorous** | Milligram | 36 | 24 | 33 |
| **Potassium** | Milligram | 286 | 237 | 247 |
| **Magnesium** | Milligram | 17 | 11 | 11 |
| **Copper** | Milligram | 0.08 | 0.06 | 0.02 |
| **Iron** | Milligram | 0.55 | 0.27 | 0.31 |
| **Zinc** | Milligram | 0.36 | 0.17 | 0.24 |
| **Manganese** | Milligram | 0.08 | 0.11 | 0.09 |

Testing of Luke's Sample and Organic - Greenhouse provided by International Ag Labs, Fairmont Minnesota USA

The first tomato was raised by Luke Lemmers as a demonstration plant. It was an unnamed open pollinated cherry tomato and raised outdoors. Our lab analyzed the soil and I made the fertility recommendations. Later our lab analyzed the tomatoes for nutrient density.

The second tomato sample came from our local grocery store. They were premium organic cherry tomatoes raised in a greenhouse in Mexico. You can also see how the USDA average compares to actual tomato samples.

Luke was picking 12-13 brix tomatoes but the sample he picked for the lab analysis had to ship through the mail so he chose tomatoes that were less than fully ripe. I imagine the same thing occurred with the organic greenhouse sample and most of the samples analyzed by the USDA.

The comparison shows that tomato nutrient density varies tremendously. This is just the tip of the iceberg for what we should see looking at the data coming out of the Tomato Project. By analyzing many samples from other tomato growers around the country we should be able to derive an initial standard of nutrient density for tomatoes.

Here is my prediction for the future: A large share of the produce market will buy and sell food on the basis of nutrient density--and I am going to be a part of making that a reality. Will you?

Today two food systems are jostling for market share: Cheap food grown as a commodity and Organic Food grown as a value-added alternative to commodity food. In the very near future nutrient dense foods will disrupt the marketplace and take prominence over both the cheap food and the organic food since neither quantifies nutrient density. Mark my words.

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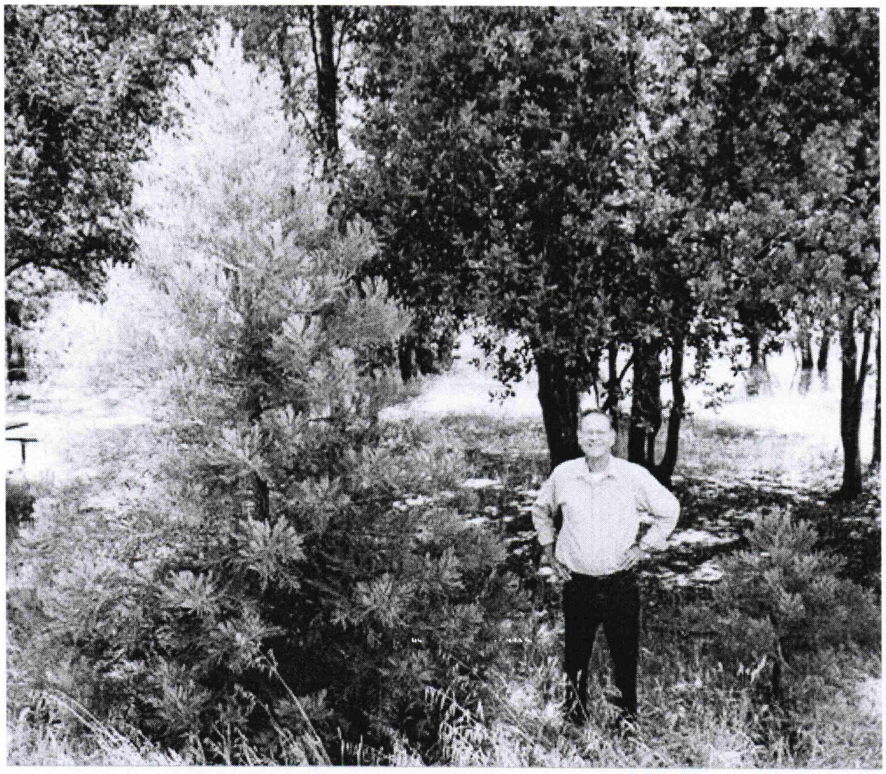
The Tomato Project

# HISTORY OF THE TOMATO PROJECT

The Tomato Project is happening because of 2 dealers with High Brix Gardens. It really began over 50 years ago when Lynn Hoag was 13 years old. Prior to this he was raised in India and saw first-hand the necessity of growing food. This sparked a passion in him that continues to this day.

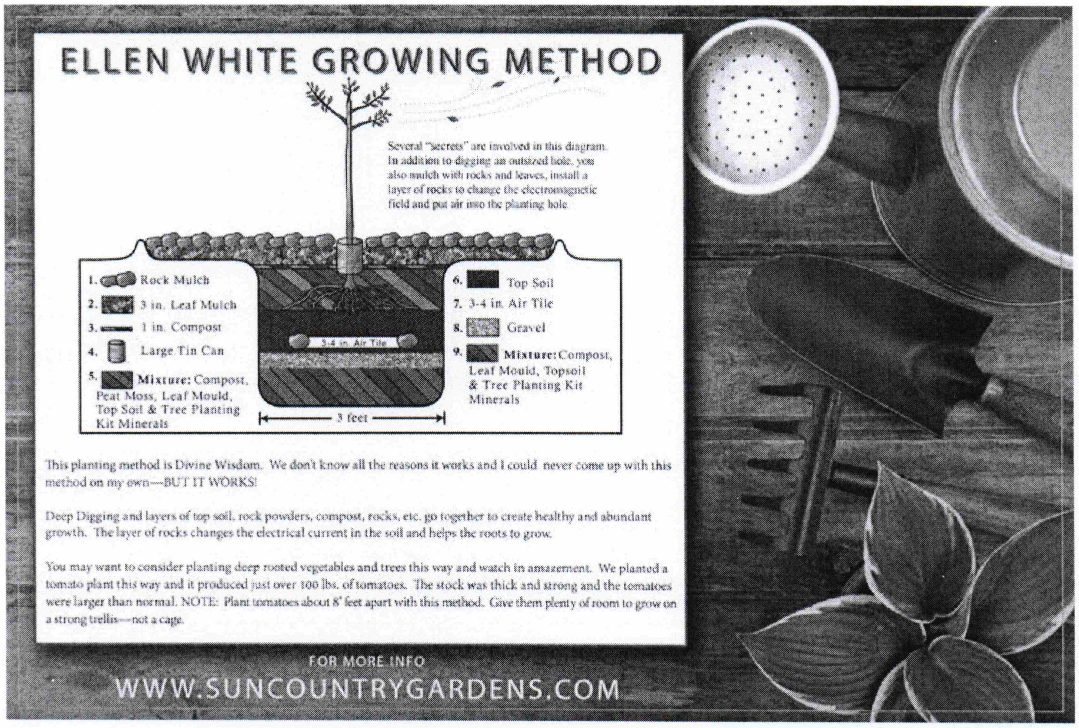
After his family returned to the United States, Lynn took advantage of a life-changing opportunity. He took a hands-on garden class taught by Herbert Clarence White. In this class he was taught the Ellen White method of planting trees by her grandson. This method was given as a revelation in a night vision to Ellen White--an early founder of the 7th Day Adventist Church.

Lynn has taught this same method ever since with some adaptations along the way. It also makes pine trees grow much faster. In this photo you can see Lynn with 2 trees. Both were planted on the same day; the one on the left by the Ellen White method and the other by the forestry method. The results speak for themselves.



One of Lynn's findings is that this method works great with tomatoes. Most commercial tomato production achieves a yield of 15-35 tons per acre. This works out to about 5-12 lbs. of harvestable tomatoes per plant. Long-season tomato plants in greenhouses can double this yield from 10-25 lbs. per plant.

Lynn made an amazing discovery! Tomato plants grown with the tree planting method consistently yielded 100 lbs. per plant for large-sized varieties. Here is a graphic showing Lynn's current method of planting trees.



ELLEN WHITE GROWING METHOD

Several "secrets" are involved in this diagram. In addition to digging an outsized hole, you also mulch with rocks and leaves, install a layer of rocks to change the electromagnetic field and put air into the planting hole.

1. Rock Mulch
2. 3 in. Leaf Mulch
3. 1 in. Compost
4. Large Tin Can
5. Mixture: Compost, Peat Moss, Leaf Mould, Top Soil & Tree Planting Kit Minerals
6. Top Soil
7. 3-4 in. Air Tile
8. Gravel
9. Mixture: Compost, Leaf Mould, Topsoil & Tree Planting Kit Minerals
3-4 in. Air Tile
3 feet

This planting method is Divine Wisdom. We don't know all the reasons it works and I could never come up with this method on my own—BUT IT WORKS!

Deep Digging and layers of top soil, rock powders, compost, rocks, etc. go together to create healthy and abundant growth. The layer of rocks changes the electrical current in the soil and helps the roots to grow.

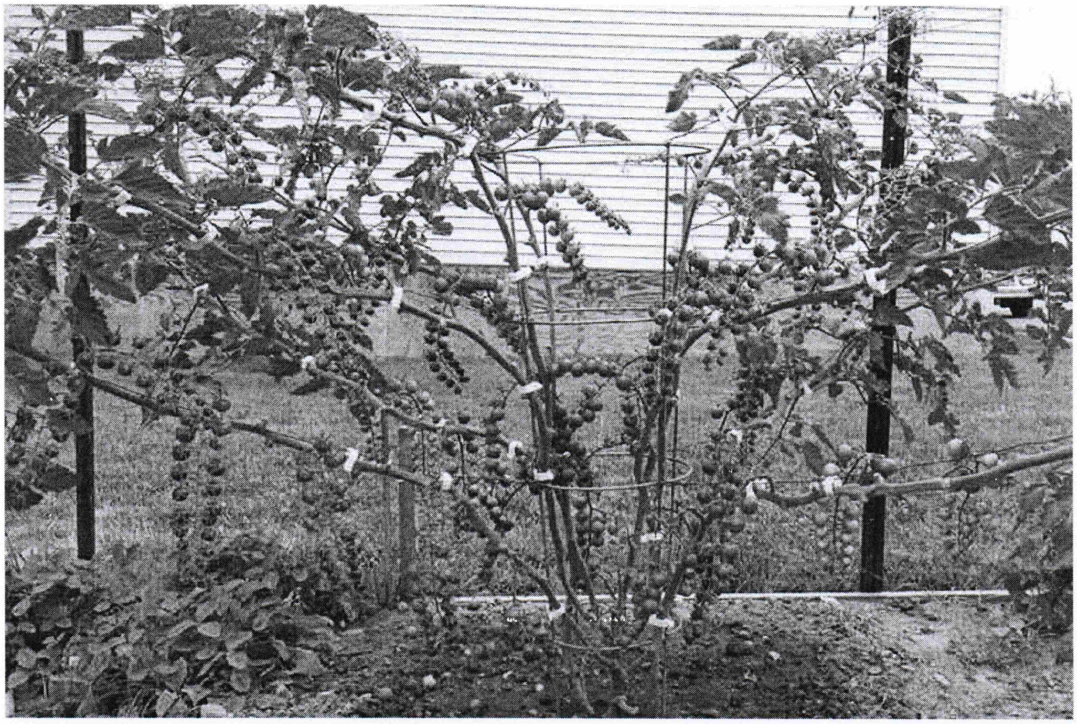
You may want to consider planting deep rooted vegetables and trees this way and watch in amazement. We planted a tomato plant this way and it produced just over 100 lbs. of tomatoes. The stock was thick and strong and the tomatoes were larger than normal. NOTE: Plant tomatoes about 8' feet apart with this method. Give them plenty of room to grow on a strong trellis—not a cage.

FOR MORE INFO
WWW.SUNCOUNTRYGARDENS.COM

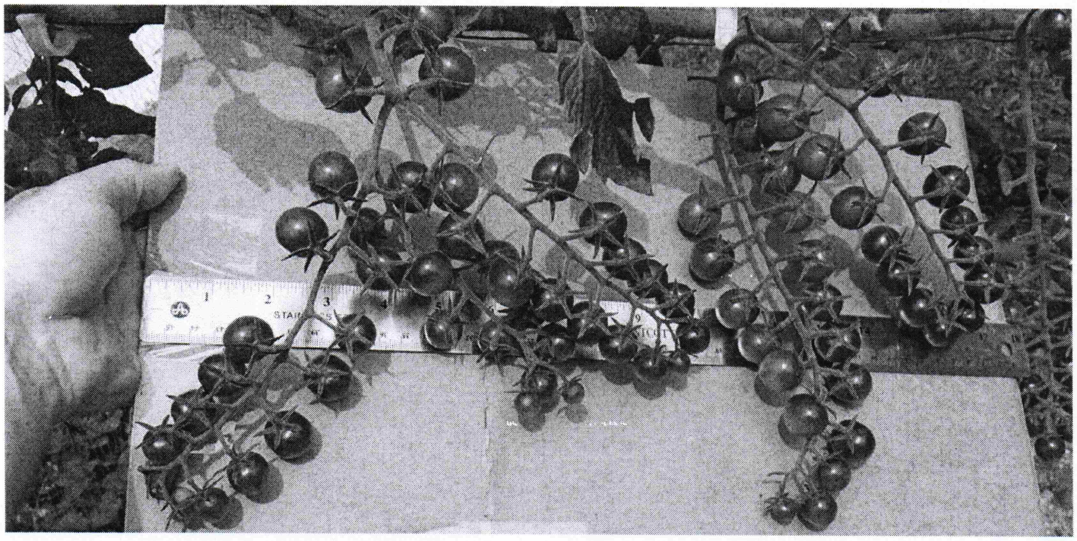
This discovery prompted Luke Lemmers of Fix My Soil, LLC to plant a tomato in 2015 using this method combined with ongoing fertility used in the High Brix Garden program. Luke was given an unknown cherry tomato variety from a friend. It was originally a volunteer that had been replanted and had the seed saved for 4 years. Luke used a custom tree planting mix based off a soil test.

The tomato was transplanted on May 29th and lasted till an early killing frost on August 31st. Frequent nutrient drenches were applied in order to maintain soil conductivity and regular foliar sprays were also applied.

The plant was staked out with 12 runners; 3 going to each corner. Once the plant started growing we observed blossom clusters that just wouldn't quit. Numerous blossoms combined in long clusters made the plant stand out to visitors coming to pick up their mineral mix from Luke.



In total the plant formed 4,257 tomatoes with an average of 25.6 tomatoes per cluster. The highest brix was measured at 13. A few clusters had an outstanding number of tomatoes and blossoms with some in the 60's and 70's. Here are two clusters totaling 82 tomatoes/blossoms. Notice how the clusters divide and keep right on flowering.



Luke got quite a few comments from people who remarked that they have never seen a tomato plant like that. Later I asked for a sample to run a nutrient density test in our lab. I will share the results in another article and compare them with some organic cherry tomatoes purchased at our local grocery store.

By the end of the season Luke and I decided to pursue a larger demonstration plot for a field day, hence the 2016 Tomato Project.

**Note:** If you haven't signed up for more information on the Tomato Project this is your last email on the subject. The rest of the articles will be sent only to those who want more information. If that is you **please sign up here.** If you have already signed up you are good to go.

Wishing you the best tomatoes,

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P.S. I forgot to mention the overall yield on the cherry tomato plant...54 lbs. This is a calculated number because some of the tomatoes did not reach maturity due to the early frost. This is a remarkably high yield for a cherry tomato plant. The big question is how high can it go with full-sized varieties. This year we are going to find out. One variety in the test plot is already bearing: Early Girl.

Next Article: What is a Nutrient Dense Tomato? If you want it **sign up here.**
Are you planning to join us on September 10th? **If so you can register right now at the best price:**